

_____ CEMENTITIOUS MATERIALS

NOTE TO SPECIFIERS: Use Conc. 3 when advised by D-1511. This paragraph is not structured to be used, by reference, as a specifications for portland cement only. Items such as grout, mortar, precast concrete products, and similar items in which portland cement is required shall be listed in subparagraph a., and the type of portland cement required should be specified directly in the paragraphs covering such items. Consult D-1511 on questions regarding cement specifications.

a. General. - For purposes of these specifications, cementitious materials shall be interpreted to mean any of the following: portland cement, or portland cement plus a pozzolan, or blended hydraulic cement.

For these specifications, any of the above-defined cementitious materials are suitable for use in all cast-in-place concrete and concrete products ¹[except portland cement is required for grouting mortar for equipment and metalwork as specified in paragraph _____ (Grouting Mortar for Equipment and Metalwork), for _____, _____, and for _____ as specified in paragraph(s) _____, _____, _____, _____, and _____].

Cementitious materials shall be free from lumps and other deleterious matter and shall be otherwise undamaged when used. Before a concrete placement is started, sufficient cementitious materials shall be in storage at the batch plant to complete the placement.

Transportation from the place of manufacture to the batch plant shall be by means which will protect the cementitious materials completely from exposure to moisture. Immediately upon receipt at the jobsite, bulk cementitious materials shall be stored in dry, weathertight, properly ventilated bins until the cementitious materials are batched. The bins shall be emptied and cleaned by the Contractor when so directed by the Government; however, the intervals between required cleanings will normally be not less than 6 months. Each shipment of bagged cement shall be stored so that it may readily be distinguished from other shipments and shall be stored in a dry, enclosed area protected from moisture. To prevent undue aging of bagged cement after delivery, the Contractor shall use bags of cement in the chronological order in which they were delivered to the jobsite.

All storage facilities shall be subject to approval by the Government and shall be constructed to permit easy access for inspection.

²(b. Cementitious materials options. -

c. Materials. -)

d. Acceptance. - Cement and pozzolan will be accepted in accordance with Department of the Army Regulation No. ER 1110-1-2002, Cement and Pozzolan Acceptance Testing.

(1) Prequalified producer. - If cement or pozzolan is supplied from a producer prequalified, as described in appendixes A and B of the above-noted regulation, for the specific material to be supplied, the cement or pozzolan may be shipped directly from the product bin. Prequalification shall include required types, classes, and optional limitations such as low alkali, false set, or "R" value when specified. A complete test report shall be submitted to the Bureau construction office for each lot of cement or pozzolan from which shipments are supplied.

All cement and pozzolan shipments shall be accompanied by shipping documents containing the following:

- (a) Certification that the material meets all applicable requirements of these specifications.
- (b) Type or class of material shipped, including optional limitations such as "MS," "false set," or "low alkali," or "R" value.
- (c) Manufacturing location and dates.
- (d) Lot (bin) number.
- (e) Date of shipment.
- (f) Quantity of material shipped.

(2) Testing for non-prequalified producer. - If the producer is not prequalified for the specific material to be supplied, the cement or pozzolan shall be sampled and stored in sealed silos, and will be tested by the Government for compliance before it is shipped from the sealed silos.

(3) Testing for other categories. - When a producer is removed from the list of prequalified producers for the material being supplied, or when the Contracting Officer determines that sealed-silo testing and acceptance are otherwise necessary, acceptance will be by successful tests on cement or pozzolan reserved for Government use in sealed silos.

(4) Basis for acceptance, removal, and reinstatement. - Acceptance, removal, and reinstatement of a producer as a prequalified source for a specific material are based primarily on project sample tests and statistical evaluation of past test results. These criteria are listed in Department of the Army Regulation No. ER 1110-1-2002.

When so directed by the Contracting Officer, the producer shall test cement for compliance with the false-set limitation at the latest time, prior to shipment, that the cement is still in possession of the cement company. Testing frequency shall be as directed by the Contracting

Officer and may be as high as one test per truck (about 25 tons) of cement shipped. Cement failing to meet false-set requirements at any time prior to shipment shall not be shipped for Government use.

The cement producer shall evaluate cement strength uniformity in accordance with ASTM designation: C 917. The results shall be reported in tabular and graphical form for all test ages. One copy of each shall be sent to the ³(Project) Construction Engineer, _____, and one copy of each shall be sent to the Bureau of Reclamation, Attn D-1510, PO Box 25007, Denver CO 80225.

Cement or pozzolan not meeting specifications requirements may be rejected by the Government at any time prior to its use in concrete, and the Contractor shall not be entitled to adjustments in price or completion time by reason of any delays caused by rejection of unacceptable cement or pozzolan, nor for additional expense of handling and replacing rejected cement or pozzolan. Furthermore, concrete made with cement or pozzolan which is subsequently tested and does not meet specifications requirements may be rejected by the Government and shall, if rejected, be removed and replaced by the Contractor at his expense.

The Contractor may be charged the cost of testing of all cement or pozzolan which has been ordered in excess of the amount used for the work under these specifications. The charges to be made for the Government expense invested in quality assurance of excess cement or pozzolan will be at the rate of \$2.00 per ton and may be deducted from payments due to the Contractor.

e. Measurement and payment. - Measurement for payment for furnishing and handling cementitious materials will be made on the basis of batch weights and batch counts at the batch plant. When determined appropriate by the Contracting Officer, cementitious materials, either bulk or in bags, used for miscellaneous concrete will be measured for payment in the most practicable manner.

Payment for furnishing and handling cementitious materials will be made at the applicable unit price per ton bid in the schedule for furnishing and handling the various items of cementitious materials, which unit price shall include the cost of purchasing, transporting, handling, and storing cementitious materials. One ton will be considered as 2,000 pounds.

³(Payment) (Except as otherwise provided below, payment) will be made for cementitious materials used in concrete placed within the pay lines for such concrete. Payment will be made also for cementitious materials used in concrete placed outside the pay lines for such concrete when directed by the Contracting Officer, except that no payment will be made when the requirement for such concrete is determined by the Contracting Officer to be the result of careless excavation or excavation intentionally performed by the Contractor to facilitate his operations: ³[Provided, That payment for cementitious materials used in concrete placed outside the neatlines for concrete in lining will be limited to the percentage specified in subparagraph _____ d. (Concrete in lining).]

⁴(Payment for furnishing and handling cementitious materials for foundation grouting, backfill grouting, grouting concrete cooling systems, and contraction joint grouting will be made at the respective unit prices per ton bid therefor in the schedule.)

No payment will be made for cementitious materials used in wasted concrete, mortar, or grout; cementitious materials used in replacement of damaged or defective concrete; cementitious materials used in extra concrete required as a result of overexcavation unless the overexcavation is directed by the Contracting Officer; and cementitious materials used in concrete placed by the Contractor in excavations intentionally performed to facilitate the Contractor's operations.

The cost of cementitious materials used in items of concrete specified in subparagraph _____ b. (Payment for concrete) shall be included in the applicable prices bid in the schedule for the items for which such cementitious materials are required.

¹Include when applicable and list all other items or concrete products in which portland cement is required. Specifiers should complete attachment to this standard regarding consideration of the use of fly ash and materials containing fly ash.

²Include Conc. 3A, 3B, 3C, or 3D as applicable for subparagraphs b. and c.

³Delete or revise as required.

⁴Include when separate payment will be made for any of the grouting items listed. Delete those items not applicable to the work involved.

3-15-85 Revisions: Revised subparagraph d.